# NOTES AND MEMORANDA.

## A PROBLEM IN DEFERRED PAYMENTS AND THE TABULAR STANDARD.

The intended purpose of a tabular standard for deferred contracts is to shield both borrowers and lenders from losses due to unforeseen changes in the value of the money unit. The ideal is that contracting parties should, in general, be able to count on receiving or paying back with interest an equivalent amount, or purchasing power over an equivalent amount, of certain goods.

Any individual lender might feel satisfied to get back an equivalent amount, plus interest, of the particular goods he wished to use. But if in the mean time those goods increased in value compared to others, he would be more than equally well off. Even tho the goods in question were the ones it was his original intention to use, the fact that for them he can now purchase a larger amount of other goods than formerly may induce him to exchange part of them for these other goods when without the relative change in values he would not have done so. In that case he has gained by this change. So a borrower, if he were to pay back an equivalent amount of certain goods, plus interest, and if these goods appreciated in value relative to the goods he was engaged in producing, so that he had to pay back, measured in the latter, a considerably larger amount than he borrowed, would be a loser by the shifting of relative values. The ideal, then, has been to include in the index number expressing the general price level different elements, so that what would be returned (in contracts based on a tabular standard) would be purchasing power over an equivalent amount of goods in general.

It is therefore impossible to assume that repayment should be equivalence of purchasing power over any one thing

or any small group of things. But there might be some question whether there should be repaid purchasing power over an equivalent amount of capital, of investment goods, or purchasing power over an equivalent amount of income services, an equivalent amount of consumption goods. The form of index number will be different according as we adopt the one or the other standard or a standard between the two. In the one case we should make our index number for the price level of any year by comparing the prices of each kind of existing capital, for some point of time in that year, with the prices for the corresponding point in the year selected as a standard. Then we should take an average of these ratios, weighting each ratio by the existing value, at the standard year price,[1] of that kind of capital, the value *at* an *instant* of time. In the other case we should construct our index number from the prices of goods consumed *during* the years compared, weighting each price ratio by the value, at the standard year price, of that kind of goods consumed *during* a *period* of time, probably the year of which the price level was desired. It can easily be seen that, at least in theory, there may be a marked difference in the results likely to be reached by these two methods, and that either one may cause unforeseen injury to those whose special circumstances are better adapted to the other.

Let us first consider capital as a standard, repayment to be in purchasing power over an equivalent amount of capital, with interest. Let us assume a contract to be made, between a borrower and a lender, on this basis. If, then, before the time of repayment the rate of interest rises, the value of durable capital will fall as compared to the value of services and the more consumable forms of wealth, since the value of any article is the discounted value of its future earnings or of its future services. Then to settle the contract by

[1] See Walsh, The Measurement of General Exchange-Value, p 541, and the references there given. This weighting by the quantity in the given year times the price of the standard year is followed also by Professor Irving Fisher in The Rôle of Capital in Economic Theory (Economic Journal, December, 1897, vol 7, pp 516 and 517), and the most complete defense of it is to be found in Professor Fisher's unpublished lectures

repaying an equivalent purchasing power over durable capital would be to settle it by repaying less than an equivalent purchasing power over consumption goods. The borrower would have gained and the lender would have lost. Certainly, a borrower who had contracted the loan for the sake of immediate consumption might be regarded as having profited by the change in relative values. On the other hand, a lender who, had he not made the loan, would have spent the amount in enjoyment, is a loser. These relative positions of borrower and lender are reversed if, instead of rising, the rate of interest falls.

Let us next assume the income standard, repayment being made in an amount of income services and consumable goods equivalent to that borrowed plus interest. If, then, the rate of interest rises during the period of contract, the value of durable capital (its future services being discounted less) will be higher in comparison to the value of these services and the value of consumption goods. Consequently, repayment of the same purchasing power over income (*e.g.*, in the form of services, such as shelter, and consumable goods) means repayment of a less purchasing power over capital in such forms as factories and machinery. Hence the borrower, if the purpose of his borrowing was to invest in these forms of capital, is a gainer, since he repays less (not allowing for interest) than he borrowed. The difference is his own. Obviously, what the borrower gains, the lender, if lending is with him an alternative not to consuming, but to investing, loses. He might have invested in a factory, enjoyed the interest, and still at the end of the period had the same factory. By lending, he gets back an equivalent purchasing power over consumption goods, but not an equivalent purchasing power over capital. If we assume that during the period of the contract the rate of interest falls instead of rising, then the borrower will lose and the lender will gain.

The borrower is not necessarily or even usually a spendthrift. He does not necessarily borrow as an alternative to going without present gratifications, but may borrow as an

alternative to missing a business opportunity. He may borrow, for example, to buy durable capital instead of consumption goods. Hence the assumption that he should pay back an equivalent of consumption goods, whether or no he pays back an equivalent of production capital, is unjustified. On the other hand, the lender is not necessarily a person who, except for the stimulus of the loan contract, would have been a spender. He is a man of three options, not merely of two. He has a choice of spending for immediate pleasure, of investing for remote returns, or of lending. If lending were an alternative merely of spending for immediate gratifications, it might seem that a proper tabular standard would return him an equivalent amount, with interest, of purchasing power over such gratifications. But since lending may be instead an alternative to investing, it might equally well be claimed that the lender should get back purchasing power, with interest, over an amount of capital equivalent to what he might have invested in at the start, had he not made loans. It is true that enjoyment is the aim of all economic effort, but this enjoyment may be intended for a later date than the termination of the loan contract. A tabular standard to be applied by both borrower and lender in the large majority of loan contracts should therefore take account of all the alternatives open to all parties, and should accordingly be based on both durable capital goods and income or consumption goods.

The problem of how to include both capital and consumption goods or income in the same index number and give each a proper weighting is in theory insoluble. Capital and income are not commensurable terms. Capital is a stock existing at a point of time, while income is a flow through a period of time.[1] How long a period shall we consider in reckoning the values of the consumable goods equivalent in weight for our index number with the value of capital existing at an instant of time? Shall the value of a railroad be given an importance in the general average equivalent to the value of wheat consumed in a month or six months

[1] See Irving Fisher, The Nature of Capital and Income, p. 52.

or a year? If the money value of the railroad has doubled, while that of theatre tickets has tripled, how shall we determine the importance in the general average to be given to each? The only solution of the difficulty is really not a solution. It is to weight the price change of each kind of goods in proportion neither to an existing stock nor to consumption during any period, but in proportion to the value of the *exchanges* of that kind of goods during a period,—as, for example, a year. This form of index number is a practical compromise between the two suggested standards of capital and income. It is, furthermore, the form of index number which grows logically out of the equation of monetary circulation.[1]

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## TAX REFORM IN WASHINGTON: THE EXEMPTION OF INTANGIBLES.

The Washington State Board of Tax Commissioners was organized in the summer of 1905 under the authority of a law passed at the legislative session of that year. As a permanent board, it was given comprehensive powers of investigation and supervision. It was especially directed to make a careful study of the revenue systems of other states and countries, so far as that could be done by correspondence and the examination of reports and statistics, and to report to the governor any changes in the revenue laws of the State that might seem desirable. The board quickly demonstrated the need of its services, and an effort in the legislative session of 1909 to secure its abolition was readily defeated.

Tho one of the youngest of American commonwealths,

[1] See Irving Fisher, Review of Walsh on The Measurement of General Exchange-Value, in Yale Review, XI 111 (May, 1902).